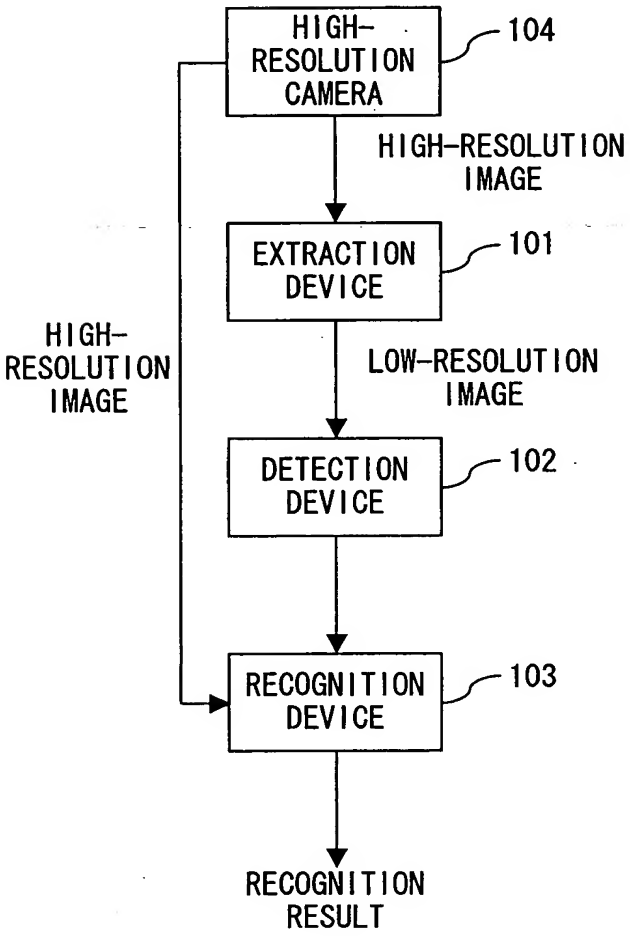
HIGH-RESOLUTION CAMERA
104
HIGH-RESOLUTION IMAGE
EXTRACTION DEVICE
101
HIGH-RESOLUTION IMAGE
LOW-RESOLUTION IMAGE
DETECTION DEVICE
102
RECOGNITION DEVICE
103
RECOGNITION RESULT

FIG. 1

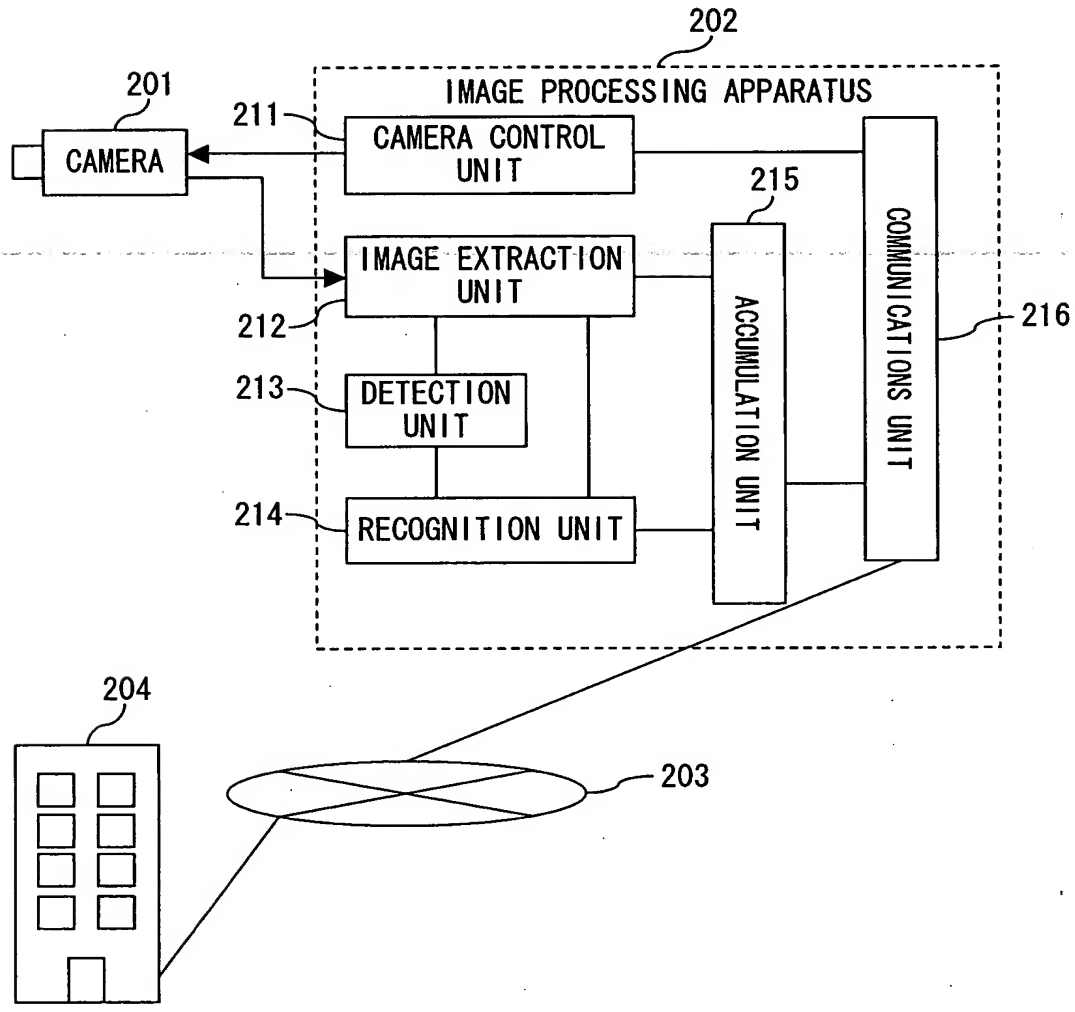
202
IMAGE PROCESSING APPARATUS
201
CAMERA
211
CAMERA CONTROL UNIT
215
IMAGE EXTRACTION UNIT
212
213
DETECTION UNIT
214
RECOGNITION UNIT
ACCUMULATION UNIT
COMMUNICATIONS UNIT
216
204
203

FIG. 2

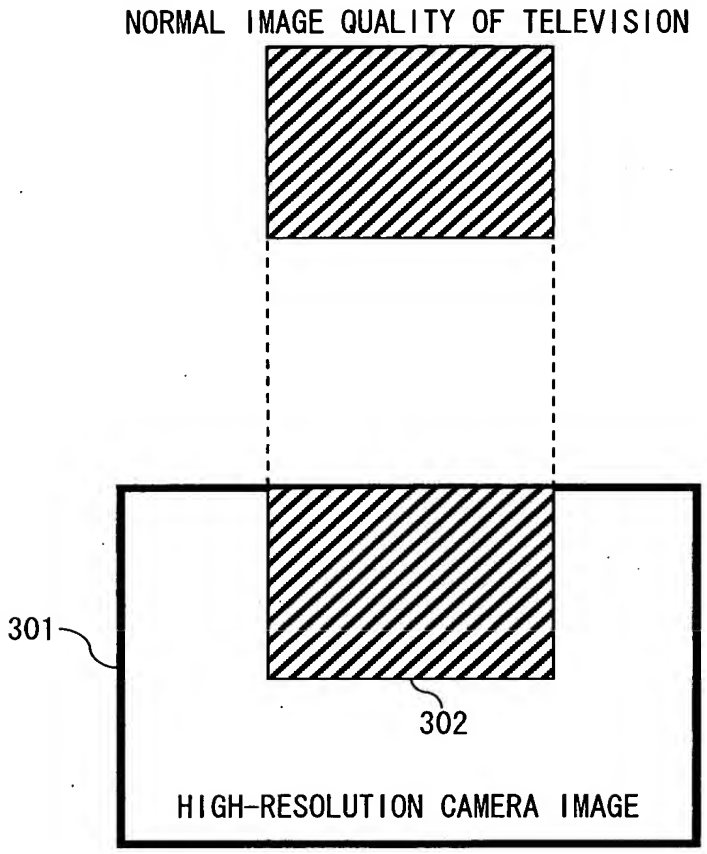
NORMAL IMAGE QUALITY OF TELEVISION
301
302
HIGH-RESOLUTION CAMERA IMAGE

FIG. 3

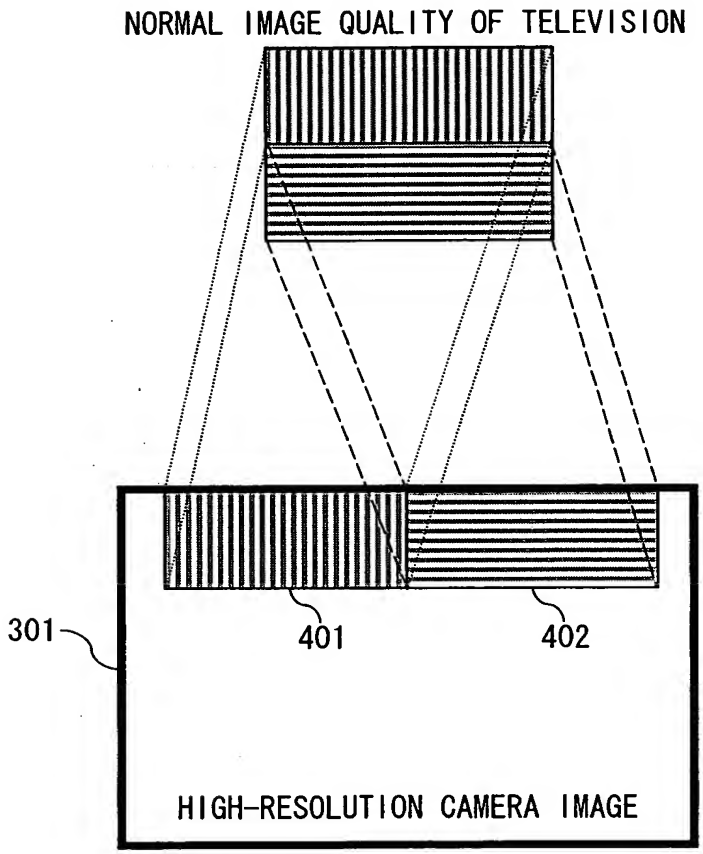
NORMAL IMAGE QUALITY OF TELEVISION
301
401
402
HIGH-RESOLUTION CAMERA IMAGE

FIG. 4

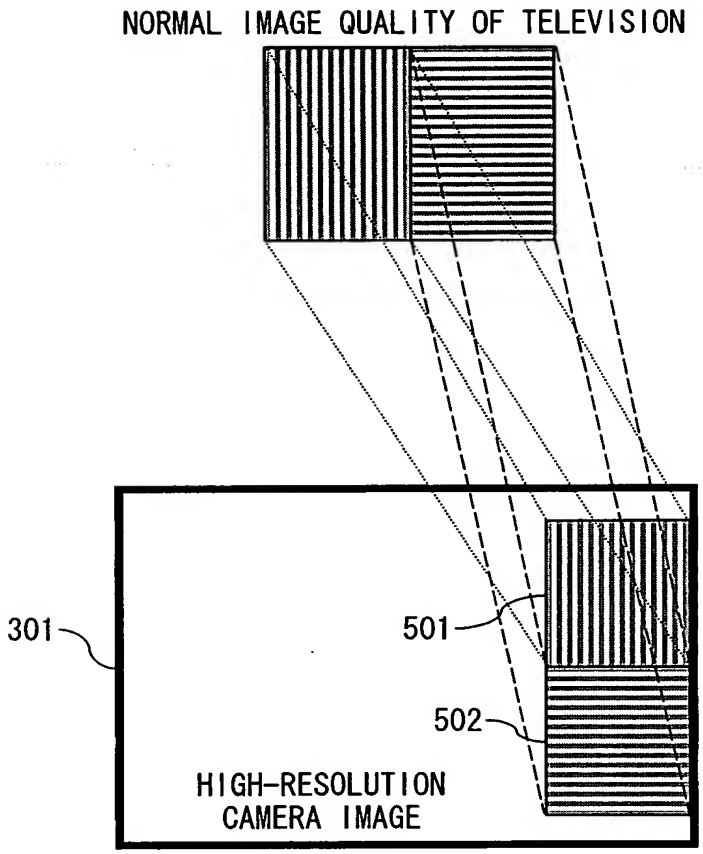
NORMAL IMAGE QUALITY OF TELEVISION
301
501
502
HIGH-RESOLUTION
CAMERA IMAGE

FIG. 5

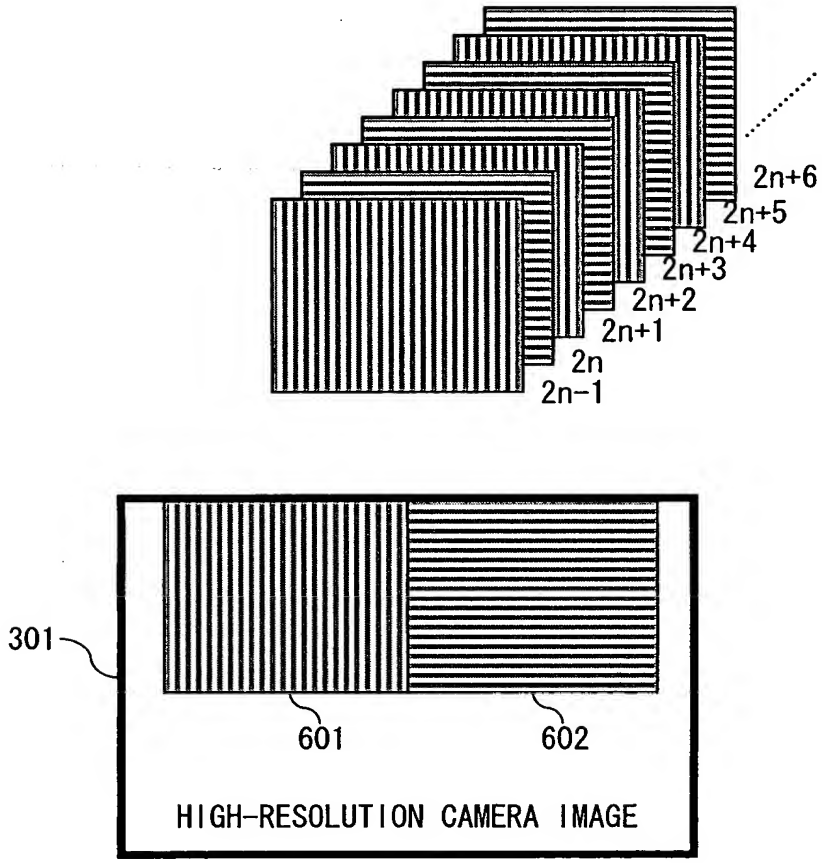
2n+6
2n+5
2n+4
2n+3
2n+2
2n+1
2n
2n-1
301
601
602
HIGH-RESOLUTION CAMERA IMAGE

FIG. 6

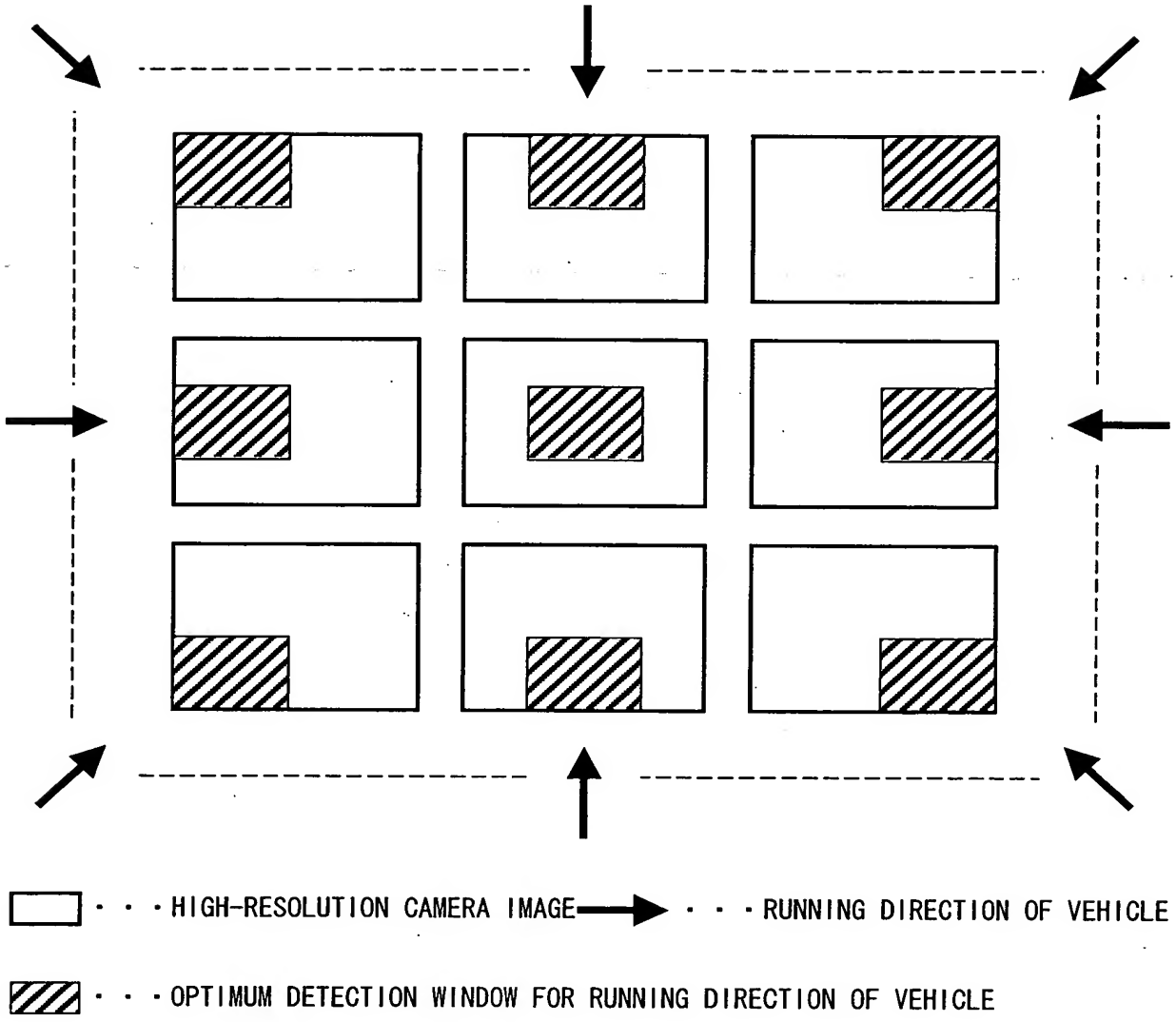
HIGH-RESOLUTION CAMERA IMAGE
RUNNING DIRECTION OF VEHICLE
OPTIMUM DETECTION WINDOW FOR RUNNING DIRECTION OF VEHICLE

FIG. 7

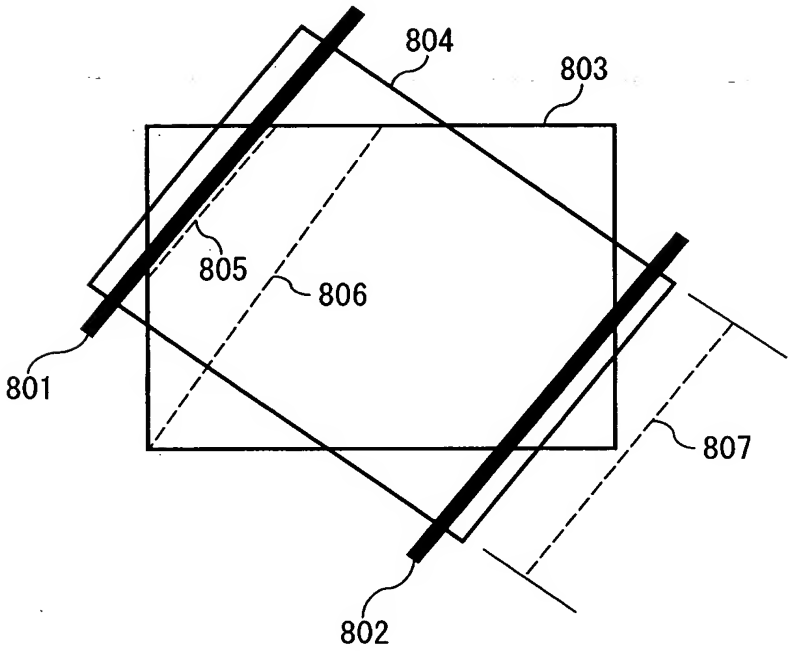

FIG. 8

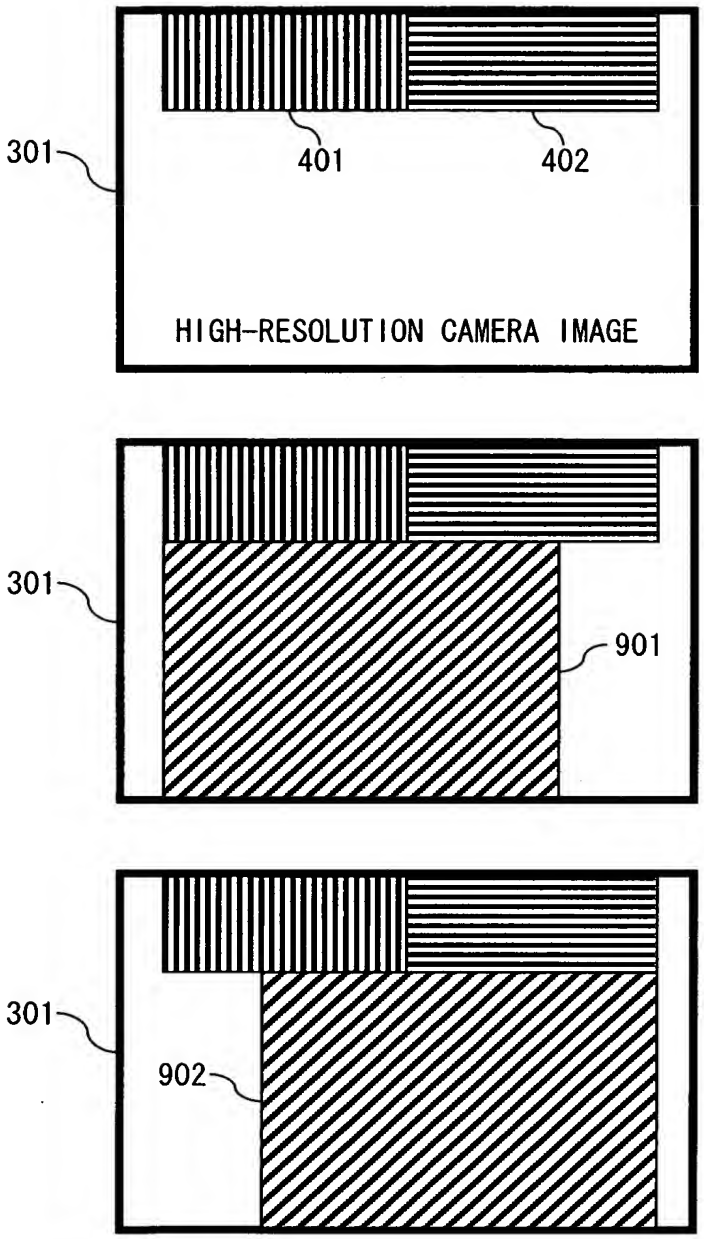

FIG. 9

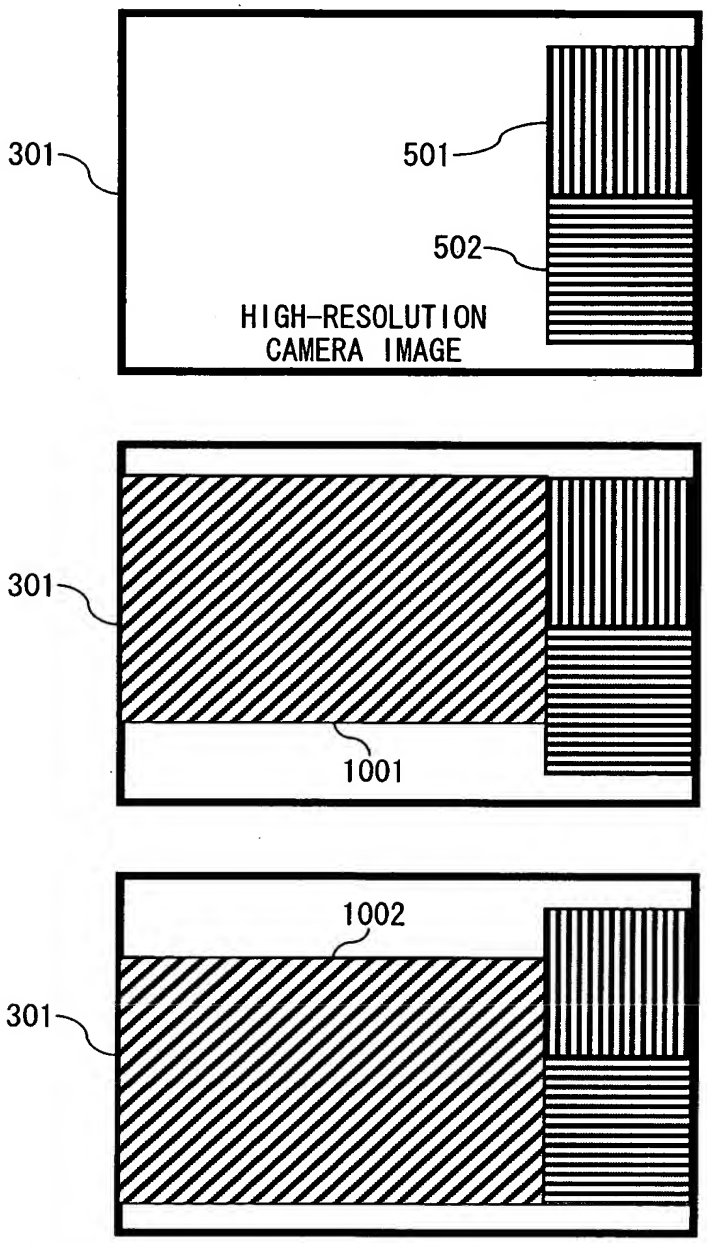

FIG. 10

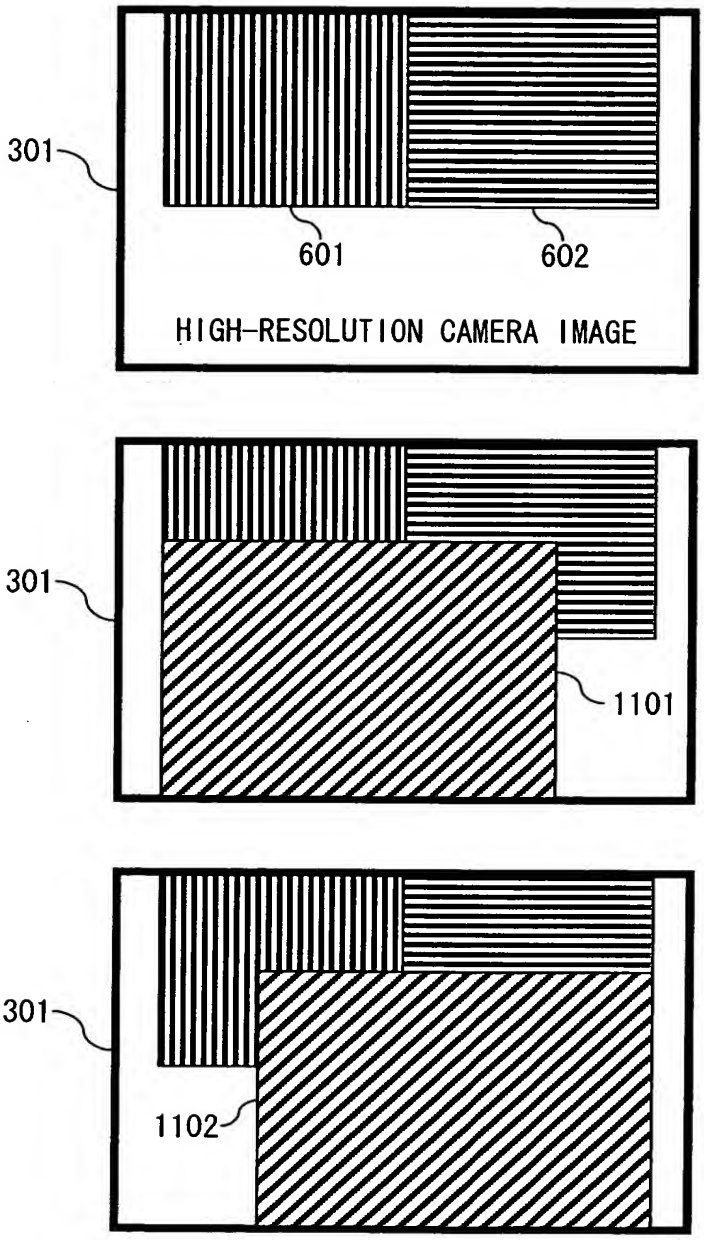

FIG. 11

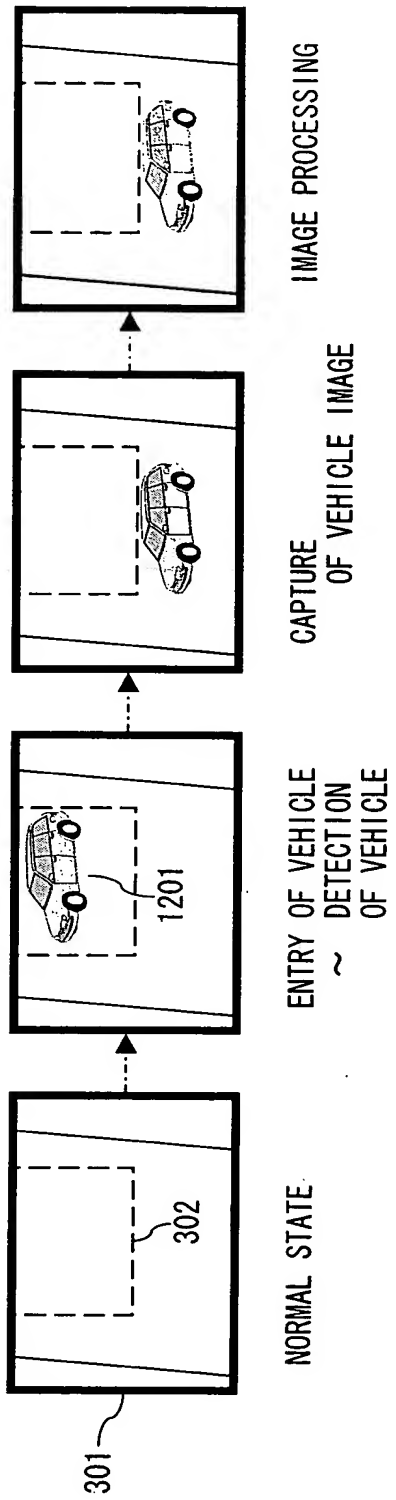
IMAGE PROCESSING
CAPTURE OF VEHICLE IMAGE
ENTRY OF VEHICLE ~ DETECTION OF VEHICLE
NORMAL STATE
1201
302
301

FIG. 12

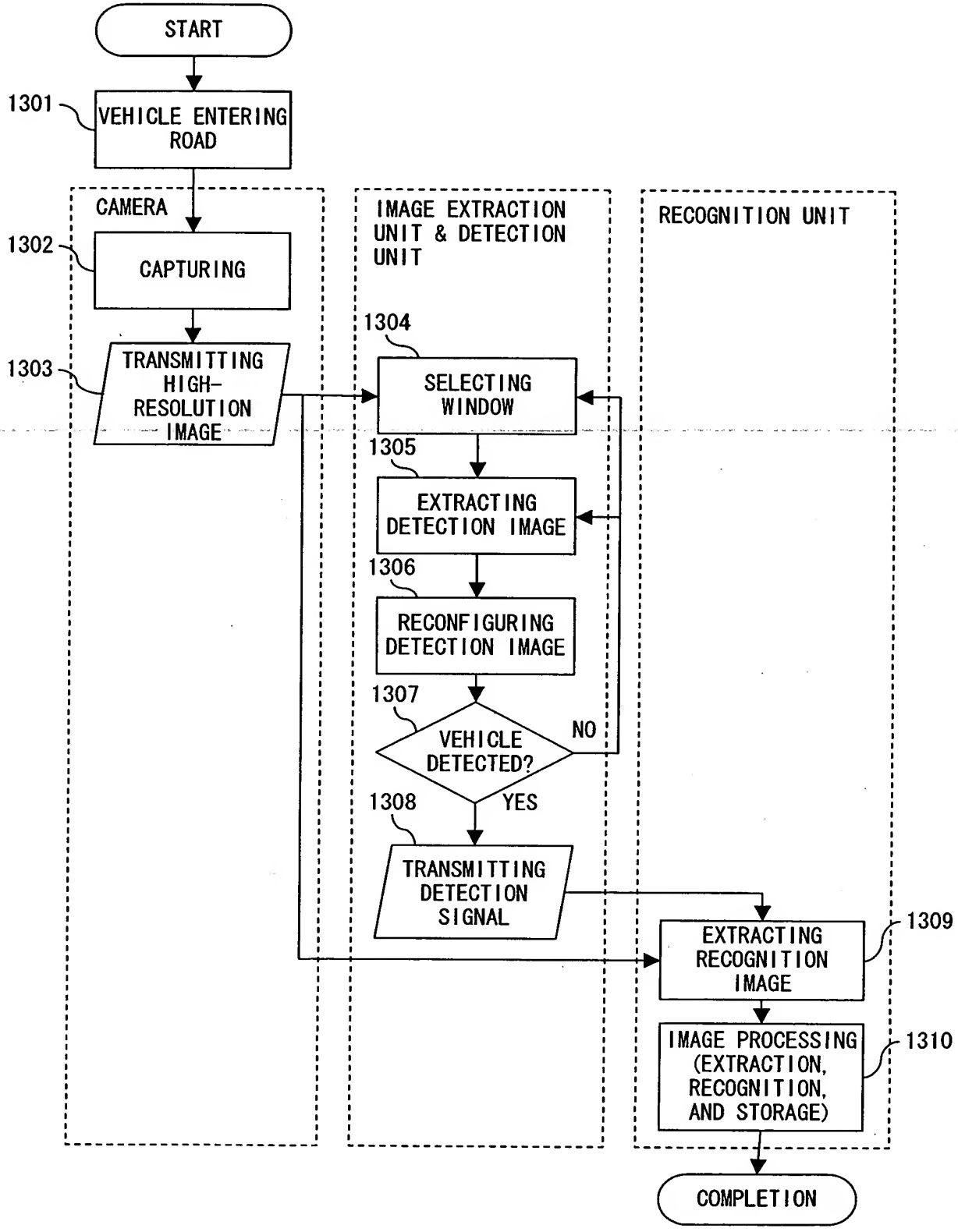
START
1301
VEHICLE ENTERING ROAD
CAMERA
1302
CAPTURING
1303
TRANSMITTING HIGH-RESOLUTION IMAGE
IMAGE EXTRACTION UNIT & DETECTION UNIT
1304
SELECTING WINDOW
1305
EXTRACTING DETECTION IMAGE
1306
RECONFIGURING DETECTION IMAGE
1307
VEHICLE DETECTED?
NO
YES
1308
TRANSMITTING DETECTION SIGNAL
RECOGNITION UNIT
1309
EXTRACTING RECOGNITION IMAGE
1310
IMAGE PROCESSING (EXTRACTION, RECOGNITION, AND STORAGE)
COMPLETION

FIG. 13

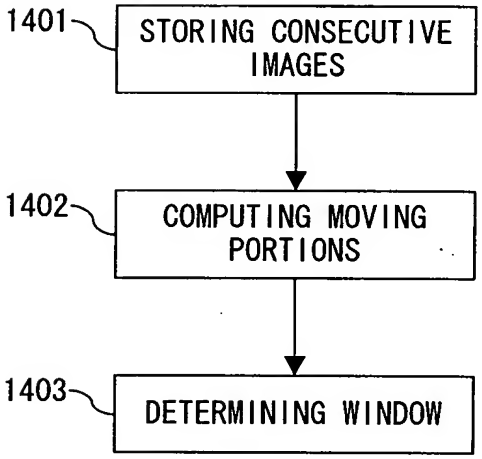
1401
STORING CONSECUTIVE IMAGES
1402
COMPUTING MOVING PORTIONS
1403
DETERMINING WINDOW

FIG. 14

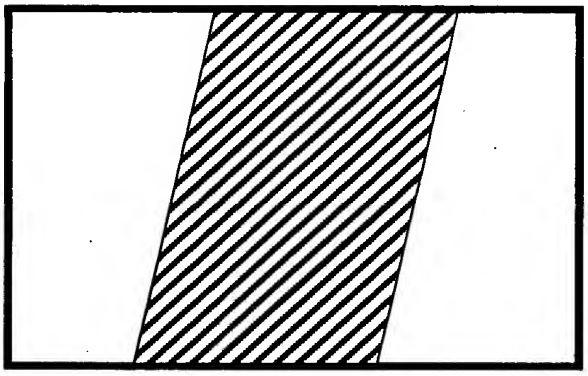

FIG. 15

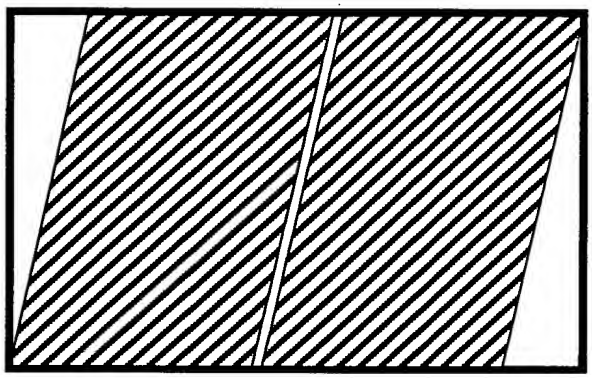

FIG. 16

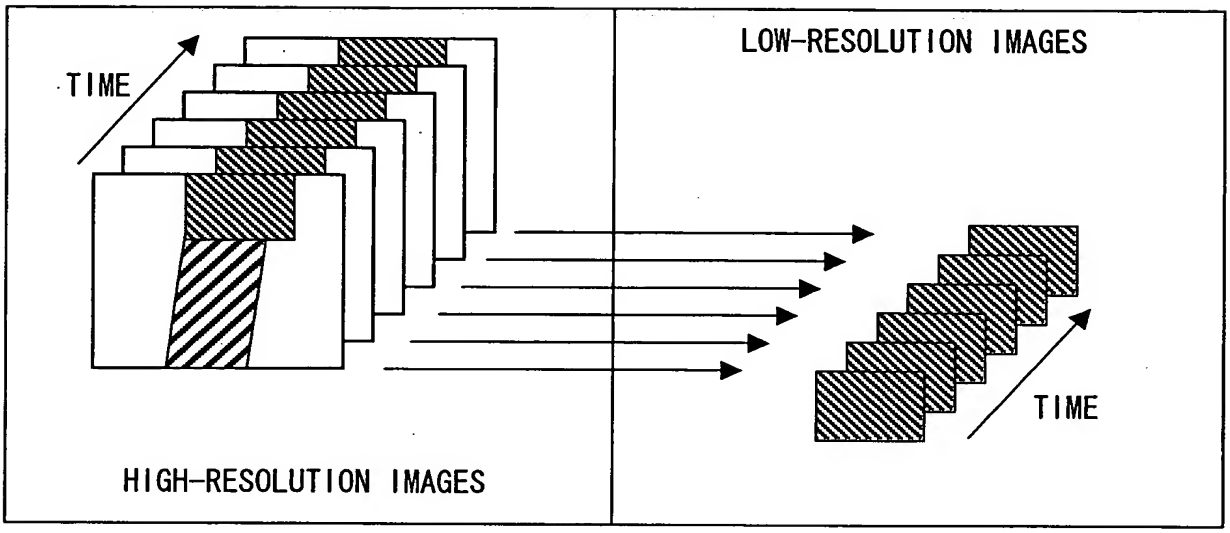

FIG. 17

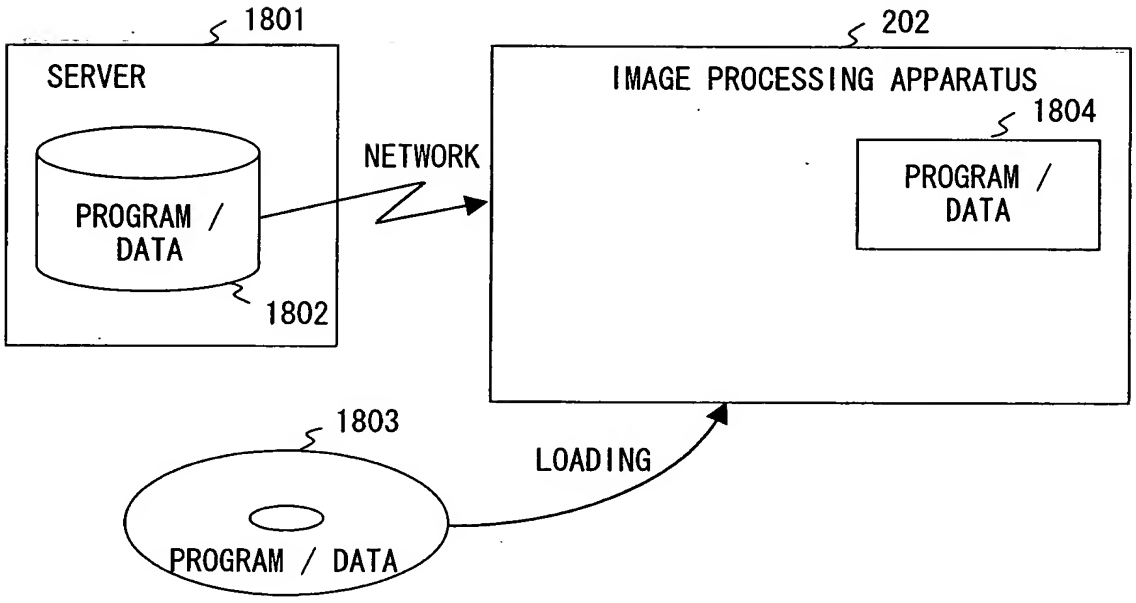
1801
SERVER
PROGRAM / DATA
1802
NETWORK
202
IMAGE PROCESSING APPARATUS
1804
PROGRAM / DATA
1803
LOADING
PROGRAM / DATA

FIG. 18